Fiscal Sustainability Report 2018

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The Parliamentary Budget Officer (PBO) supports Parliament by providing economic and financial analysis for the purposes of raising the quality of parliamentary debate and promoting greater budget transparency and accountability.

This report provides PBO's assessment of the sustainability of government finances over the long term for the federal government, subnational governments and public pension plans.

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Executive Summary

To assess whether a government's fiscal policy is sustainable requires projecting current policy beyond a budget's medium-term planning horizon. Fiscal sustainability means that government debt does not grow continuously as a share of the economy.

Across all provinces and territories, the ageing of the population will move an increasing share of Canadians out of their prime working-age years and into their retirement years, resulting in slower growth in the Canadian economy.

Slower economic growth will put downward pressure on government revenues as growth in the tax base slows. At the same time, population ageing will put upward pressure on government programs such as health care, Old Age Security and public pension benefits.

The objective of this report is to identify if changes to current fiscal policy are required to avoid unsustainable government debt accumulation and to estimate the magnitude of these changes.

Conclusions

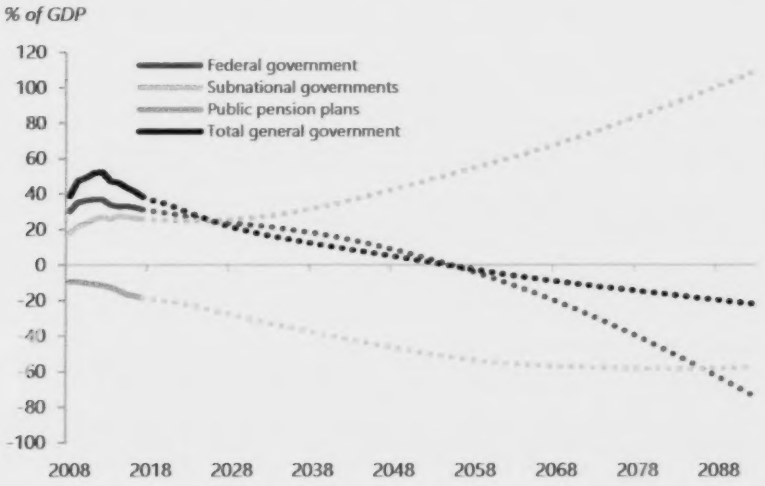
Total general government sector

From the perspective of the government sector as a whole (that is, federal and subnational governments and public pension plans combined), current fiscal policy in Canada is sustainable over the long term. Relative to the size of the Canadian economy, total government net debt is projected to remain below its current level over the long term (Summary Figure 1).

This perspective, however, masks unsustainable fiscal policy at the subnational level. Under current policy, we project that the federal government will eliminate its net debt and shift into a net asset position. Combined with the public pension plans, this net asset accumulation more than offsets the projected increase in subnational government net debt.

Sumary Figure 1

Government net debt relative to GDP



Sources: Statistics Canada and Parliamentary Budget Officer.

Note: The projection period covers 2018 to 2092.

Fiscal sustainability and the fiscal gap

PBO assesses fiscal sustainability using the fiscal gap—the difference between current fiscal policy and a policy that is sustainable over the long term.

The fiscal gap represents the immediate and permanent change in revenues, program spending, or combination of both, expressed as a share of GDP, that is required to stabilize a government's net debt-to-GDP ratio at its current level over the long term.

A negative gap indicates that net debt is projected to decline as a share of GDP and that there is room available to increase spending or reduce taxes while maintaining fiscal sustainability.

For each public pension plan, the fiscal gap represents the immediate and permanent change in contributions or benefits that returns the net asset-to-GDP ratio to its current level over the long term.

Federal government

Current fiscal policy at the federal level is sustainable over the long term. PBO estimates that the federal government could permanently increase spending or reduce taxes by 1.4 per cent of GDP ($29 billion in current dollars) while maintaining net debt at its current (2017) level of 31.1 per cent of GDP over the long term.

The federal government's sizeable medium-term primary surpluses and lower spending on children's benefits and the Canada Social Transfer (relative to the size of the economy) are primary contributors to federal fiscal room.

Subnational governments

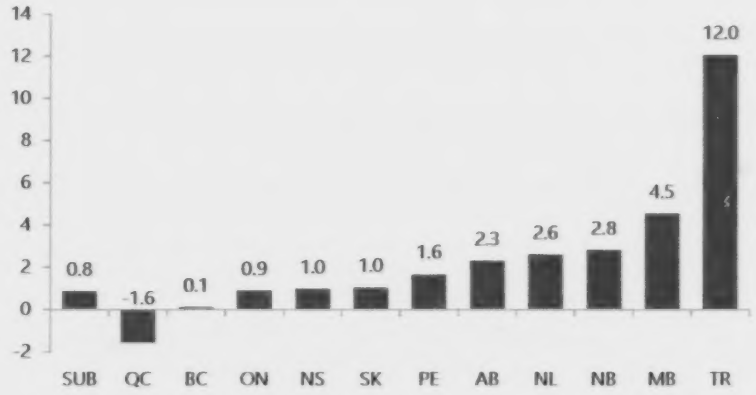
For the subnational government sector as a whole, current fiscal policy is not sustainable over the long term. PBO estimates that permanent tax increases or spending reductions amounting to 0.8 per cent of GDP ($18 billion in current dollars) would be required to stabilize the consolidated subnational government net debt-to-GDP ratio at its current level of 25.7 per cent of GDP over the long term.

Rising health care costs due to population ageing drive the deterioration in subnational government finances over the long term.

- Except for Quebec, current fiscal policies across provinces and territories are not sustainable over the long term (Summary Figure 2).
- We estimate that the subnational government sector in Quebec has fiscal room amounting to 1.6 per cent of provincial GDP to increase spending or reduce taxes while maintaining sustainability.
- Based on our estimates, the amount of policy actions required to achieve fiscal sustainability ranges from just 0.1 per cent of provincial GDP in British Columbia to 12.0 per cent of territorial GDP for the Territories.
- We estimate that Alberta makes the largest contribution to the consolidated subnational fiscal gap: 0.5 percentage points of Canadian GDP (Summary Figure 3).
- In addition to rising health care costs, some subnational governments face significant budgetary pressures in the near term, as well as reduced federal transfers (relative to the size of their economies), that compound their fiscal challenges.

Summary Figure 2 Subnational government fiscal gap estimates by province and territory

% of GDP

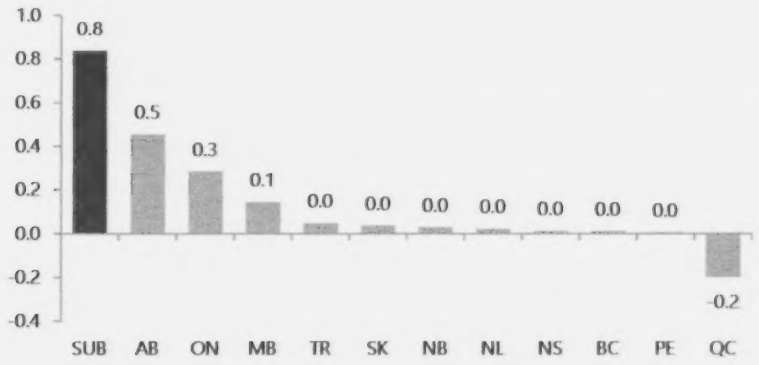


Source: Parliamentary Budget Officer.

Note: Fiscal gaps for each province and the territories are expressed relative to their corresponding provincial and territorial GDP. SUB refers to the consolidated subnational government sector. See endnote (1) for information on abbreviations for provinces and the territories.

Summary Figure 3 Contributions to the consolidated subnational fiscal gap

Percentage points of GDP



Source: Parliamentary Budget Officer.

Note: Contributions to the consolidated subnational fiscal gap are expressed relative to Canadian GDP. SUB refers to the consolidated subnational government sector.

Public pension plans

The current structure of the Canada Pension Plan (CPP) and Quebec Pension Plan (QPP) is sustainable over the long term. We estimate the fiscal gaps for the CPP and QPP to be, respectively, -0.1 per cent of GDP (in Canada) and -0.2 per cent of GDP (in Quebec). That is, CPP and QPP contributions could be reduced, or benefits increased, respectively, by 0.1 per cent of GDP and 0.2 per cent of GDP, while maintaining fiscal sustainability.

Sensitivity of results

To help gauge the sensitivity of our baseline fiscal gaps, we consider alternative demographic, economic and fiscal policy scenarios. We find that our qualitative assessments of fiscal sustainability for the federal and subnational governments are essentially unchanged across the range of scenarios considered. Our sustainability assessment is only reversed under alternative scenarios for one province, British Columbia, which is close to being sustainable under current policies (0.1 per cent of GDP).

1. Introduction

Fiscal sustainability means that government debt does not grow continuously as a share of the economy. Assessing whether—and the degree to which—fiscal policy is sustainable involves projecting government net debt relative to the size of the economy over the long term under the assumption that current fiscal policy is maintained.

These long-term fiscal projections are not forecasts or predictions of the most likely outcomes. Rather, they are illustrative scenarios that show the consequences of maintaining a government's current fiscal policy over the long term, after accounting for the economic and fiscal implications of population ageing.

We produce these projections to motivate parliamentary discussion about the adequacy of current fiscal policy to deal with expected long-term demographic and economic challenges because the earlier that a required policy intervention can be identified, the lower will be the cost of its implementation.

Scenarios in which there is excessive debt or asset accumulation are unlikely be realized given future fiscal policy actions and given responses by households, firms and financial markets. Nonetheless, long-term debt-to-GDP projections serve as a useful signal and gauge of the sustainability of current fiscal policy. See Box 1 in our 2017 FSR for a discussion of the impacts of government debt-to-GDP accumulation.

Arithmetically, a government's debt-to-GDP ratio will increase over time if its debt grows faster than GDP. It is informative, however, to isolate the key drivers underlying this debt accumulation: the primary balance relative to GDP and the differential between the effective interest rate on debt and GDP growth. A government's debt-to-GDP ratio will increase if its primary balance as a share of GDP is smaller than the interest-growth rate differential multiplied by the current debt-to-GDP ratio.

The degree to which current fiscal policy needs to be adjusted to achieve sustainability can be quantified by the fiscal gap. Specifically, PBO's baseline fiscal gap is calculated as the immediate and permanent improvement in the primary balance required to stabilize the debt-to-GDP ratio at its current level after 75 years. An improvement in the primary balance can be achieved by increasing revenues, decreasing spending on programs, or a combination of both. Appendix B provides a detailed definition and derivation of the fiscal gap.

The primary balance

A government's primary balance is defined as revenues less non-interest spending. It represents the contribution to debt accumulation that is directly influenced by fiscal policy. Subtracting public debt charges from the primary balance yields the more familiar budgetary balance or "net lending".

In the case of the public pension plans, we refer to the primary balance as the net cash flow, which represents plan contributions less benefits and administrative expenses.

Similar to the federal and subnational government sectors, we calculate fiscal gaps for the public pension plans. These gaps represent the immediate and permanent changes in contributions and/or benefits required to stabilize their net asset-to-GDP ratios at current levels after 75 years.

To help gauge the sensitivity of our baseline fiscal gaps, we consider alternative demographic, economic and fiscal policy scenarios.

We use Statistics Canada's *Government Finance Statistics* (GFS) as the basis for our fiscal projections.[2] The GFS measure and analyze the economic dimensions of the public sector of Canada, consistent with Canada's *System of National Accounts* and the International Monetary Fund's global guidelines *Government Finance Statistics Manual 2014*.[3]

Internationally consistent GFS support comparative fiscal analysis, such as PBO's *Fiscal Sustainability Report*, by overcoming definitional and accounting differences between public entities. In Canada and elsewhere, governments' financial statements and reports (for example, *Public Accounts*, budgets) are based on unique organizational structures and on the accounting and reporting practices of individual governments, so there is a lack of consistency across jurisdictions and over time.[4] The GFS provides the data consistency necessary for a coherent view of the current and future financial prospects of all levels of government in Canada.[5]

All our projections are based in the GFS, but align our medium-term fiscal projections for subnational governments with the Public Accounts-based budget forecasts prepared by provincial governments.[6] Users should note that discrepancies between GFS and Public Accounts-based statistics may lead to different growth paths for revenues, expenditures and the primary balance in historical data and the current forecast year, but these growth differences should tend toward zero over time.[7]

The remainder of the report is structured by sector: federal government; subnational governments; and public pension plans. Additional methodological and technical details can be found in our 2017 Fiscal Sustainability Report.

2. Demographic projection

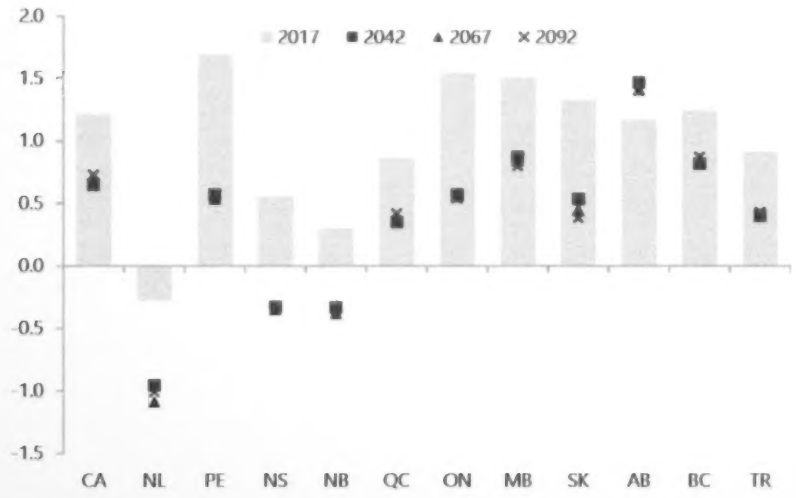
The evolving demographic profile of the Canadian population is one of the key drivers of PBO's long-term economic and fiscal projection. Across all provinces and territories, the ageing of the population will move an increasing share of Canadians out of their prime working-age years and into their retirement years, resulting in slower growth in the labour force and GDP.

PBO's baseline demographic assumptions are unchanged from our 2017 FSR.[8] Population growth at the national level is projected to slow from 1.2 per cent in 2017 to 0.7 per cent in 2092, the end of our projection period (Figure 2-1).

There are meaningful disparities in population projections at the subnational level. Alberta, Manitoba and British Columbia will see the highest population growth over the projection horizon although growth in Manitoba and British Columbia will still decline from recent levels. By contrast, Newfoundland and Labrador, Nova Scotia and New Brunswick are projected to experience population declines over the projection period.

Figure 2-1 Population growth

Annual growth, %



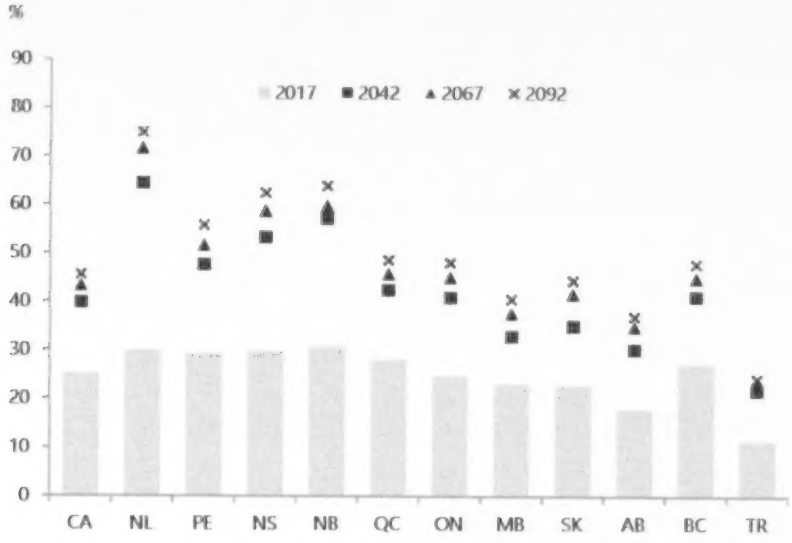
Sources: Statistics Canada and Parliamentary Budget Officer.

The median age of Canada's population is projected to increase from 40.2 years in 2013 to 44.0 years in 2063. The senior dependency ratio—the ratio of individuals 65 years and older relative to the population between 15 to 64 years of age—is projected to increase at the national level from 25.2 per cent in 2017 to 45.6 per cent in 2092 (Figure 2-2). The most acute period of population ageing is projected to occur over the next 25 years.

At the subnational level, Newfoundland and Labrador, Nova Scotia and New Brunswick are projected to see the slowest population growth and experience the most acute population ageing because, compared to the national average, these provinces are projected to have lower fertility and provincial net migration rates. The senior dependency ratio in these provinces is projected to exceed 50 per cent by 2042.

The prairie provinces and the Territories are projected to experience a smaller increase in the senior dependency ratio compared to other provinces, but the ratio is still projected to rise well above current levels, particularly over the next 25 years.

Figure 2-2 Senior dependency ratio



Sources: Statistics Canada and Parliamentary Budget Officer.

3. Economic projection

Labour input, labour productivity and GDP

Labour input measures the total number of hours worked and is determined by the size of the working-age population, the employment rate and the average number of hours worked.

Labour productivity measures the amount of output produced per hour worked. It is influenced by capital accumulation and technology.

Real GDP is equal to labour input multiplied by labour productivity. Potential GDP is the amount of output that the economy can produce when capital, labour and technology are at their respective trends.

Growth in real GDP per capita is typically used to measure increases in living standards.

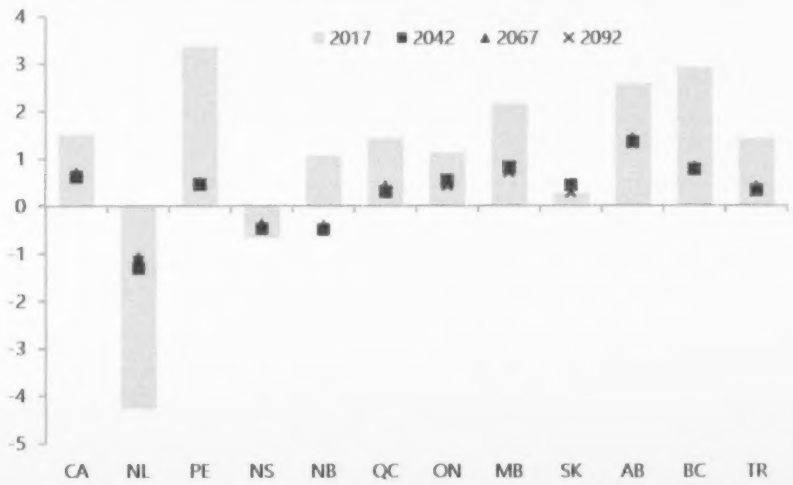
Over the long term, the Canadian economy is assumed to operate at its productive capacity, or potential GDP, which is determined by trends in labour input (that is, total hours worked) and labour productivity (that is, GDP per hour worked).[9] PBO's methodology for projecting GDP at the provincial and territorial level is detailed in our 2017 FSR.[10] Our long-term assumptions for interest rates and inflation are unchanged from FSR 2017.

As a greater proportion of the population shifts into older age groups that are less likely to work, or work fewer hours, this will put downward pressure on growth in total hours worked in the economy. Consequently, growth in real GDP and real GDP per capita—a commonly used measure of average living standards—will be slower.

Population ageing will contribute to slower growth in total hours worked at the national level but the magnitude of such changes varies significantly across provinces and territories. For example, Alberta, British Columbia and Manitoba will see relatively less drag on economic growth from population ageing (Figure 3-1). By contrast, Newfoundland and Labrador, Nova Scotia and New Brunswick will experience significantly more drag on economic growth from population ageing.

Figure 3-1 Growth in total hours worked

Annual growth, %



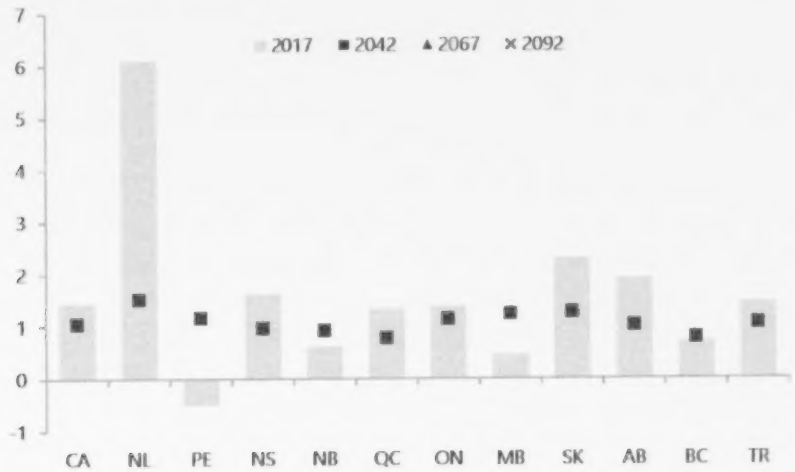
Sources: Statistics Canada and Parliamentary Budget Officer.

Nationally, we project labour productivity growth to converge to its steady-state rate of 1.1 per cent over the long term, which is in line with historical average annual growth in labour productivity observed over 1982 and 2017 (1.2 per cent).

For the provinces and territories, we project growth in labour productivity based on their respective historical average growth rates (over 1982 to 2016) but make adjustments to ensure consistency with our national projection. Newfoundland and Labrador and Saskatchewan are projected to have the fastest productivity growth over the next 75 years while Quebec and British Columbia will experience the slowest growth (Figure 3-2.)

Figure 3-2 Labour productivity growth

Annual growth, %

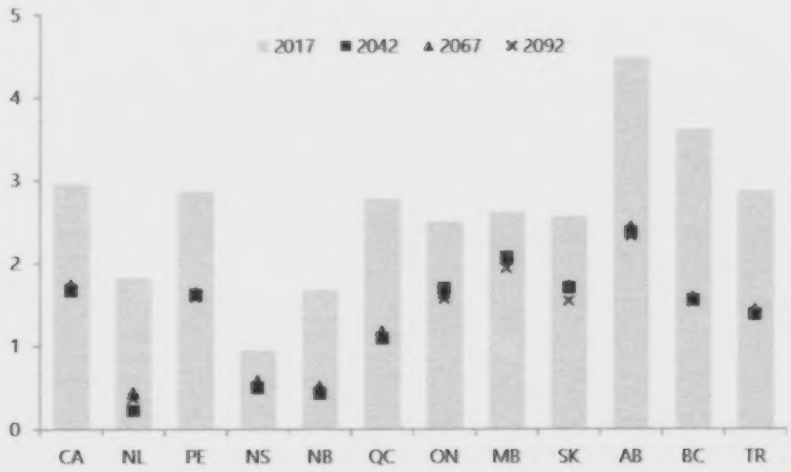


Sources: Statistics Canada and Parliamentary Budget Officer.

PBO projects that real GDP growth in Canada will slow to 1.7 per cent annually, on average, over the long term (Figure 3-3). The relative profile of real GDP growth across provinces and territories over the projection horizon primarily reflects differences in growth in total hours worked. By 2067, we project real GDP growth to range from 0.4 per cent in Newfoundland and Labrador to 2.4 per cent in Alberta.

Figure 3-3 Real GDP growth

Annual growth, %



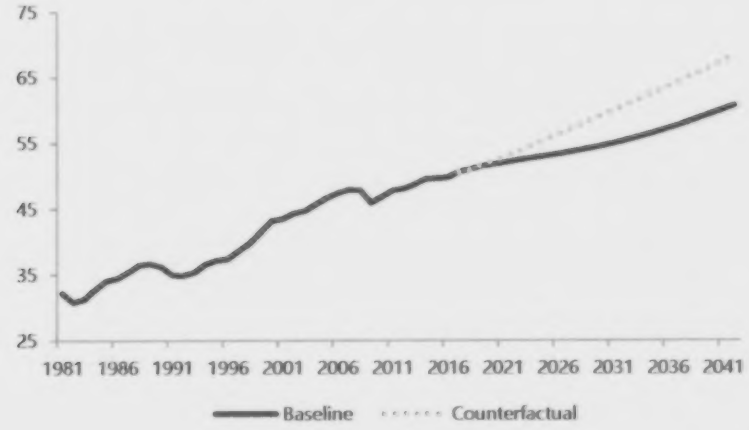
Sources: Statistics Canada and Parliamentary Budget Officer.

Growth in real GDP per capita—typically used to measure increases in living standards—is projected to average 0.9 per cent annually, which is 0.4 percentage points lower than the average growth observed over 1982 to 2017. This projected slowdown primarily reflects slower growth in total hours worked. With total hours worked projected to ultimately grow in line with the population over the long term, growth in real GDP per capita will ultimately be driven by labour productivity.

To illustrate the impact on real GDP per capita of slower growth in hours worked, we compare our baseline projection to a counterfactual scenario in which growth in total hours worked relative to the population grows at its historical average observed over 1982 to 2017 (Figure 3-4).[11] By 2042, we project that real GDP per capita under our baseline would be $7,700 or 11 per cent lower compared to this no-ageing scenario.

Figure 3-4 Real GDP per capita

Chained 2007 dollars, thousands



Sources: Statistics Canada and Parliamentary Budget Officer.

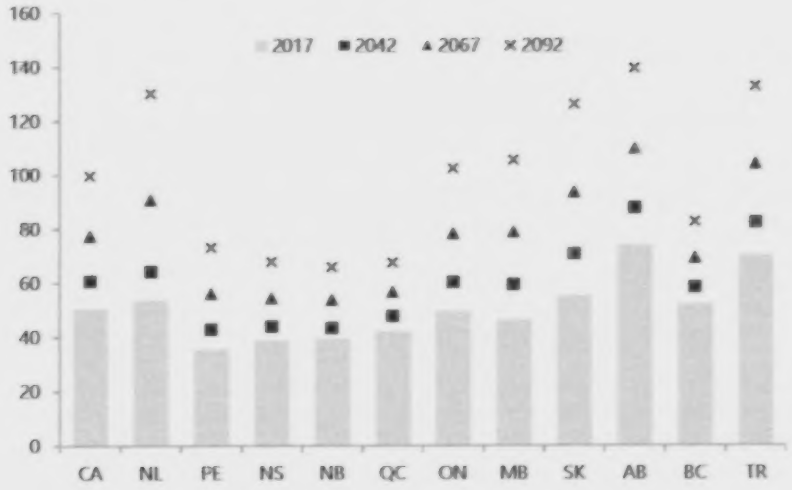
Note: The projection period covers 2018 to 2042. In the counterfactual scenario, growth in total hours worked relative to the population is maintained at its 1982 to 2017 historical average. Growth in labour productivity is the same under both projections.

Reflecting the length of the projection period and relatively small differences in growth rates, real GDP per capita levels are projected to diverge significantly across provinces and territories. Alberta, Newfoundland and Labrador, Saskatchewan and the Territories are projected to enjoy the highest living standards over the long term while Nova Scotia, New Brunswick and Quebec are projected to have the lowest (Figure 3-5).

For provinces, real GDP per capita is an important contributor to their fiscal capacity (which is closely linked to income per capita) that determines their eligibility for Equalization payments from the federal government. Provinces with fiscal capacity below the national standard would be eligible to receive Equalization, while those provinces above the national standard would be ineligible.

Figure 3-5 Real GDP per capita

Chained 2007 dollars, thousands



Sources: Statistics Canada and Parliamentary Budget Officer.

4. Federal government

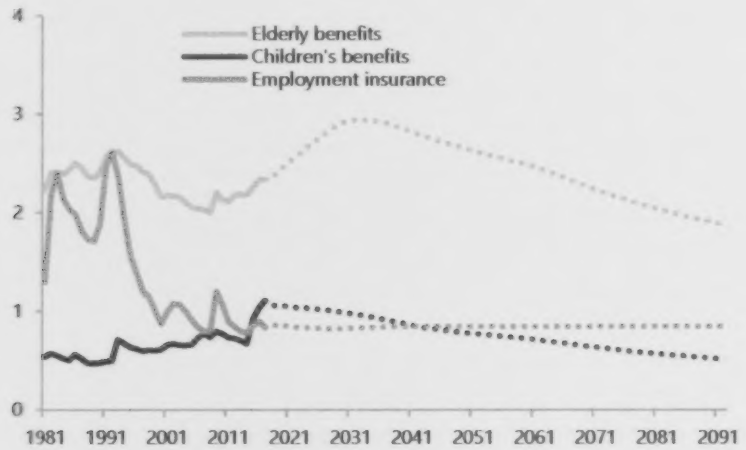
Slower growth in economic activity will put downward pressure on federal government revenues as growth in its tax base slows. At the same time, population ageing will put upward pressure on Old Age Security over the next 50 years. In the same view, the federal government's sizeable medium-term primary surpluses and lower spending on children's benefits and the Canada Social Transfer (relative to the size of the economy) are primary contributors to federal fiscal room.

Federal revenues amounted to 14.0 per cent of GDP in 2017. We project that revenues will increase to 14.1 per cent of GDP by 2022, and assume that they will remain at 14.1 per cent of GDP over the long term.

Declining transfer payments (as a share of GDP) is a key factor driving federal spending lower over the long term, most notably major transfers to individuals (Figure 4-1).

Figure 4-1 Major transfers to individuals: federal government

% of GDP



Sources: Statistics Canada and Parliamentary Budget Officer.

Note: The projection period covers 2018 to 2092.

Federal spending on elderly benefits amounted to 2.3 per cent of GDP in 2017. As baby-boom cohorts reach 65 years of age, we project that spending on elderly benefits will continue to increase, peaking at 2.9 per cent of GDP in 2032. However, given that benefit payments are indexed to inflation only,

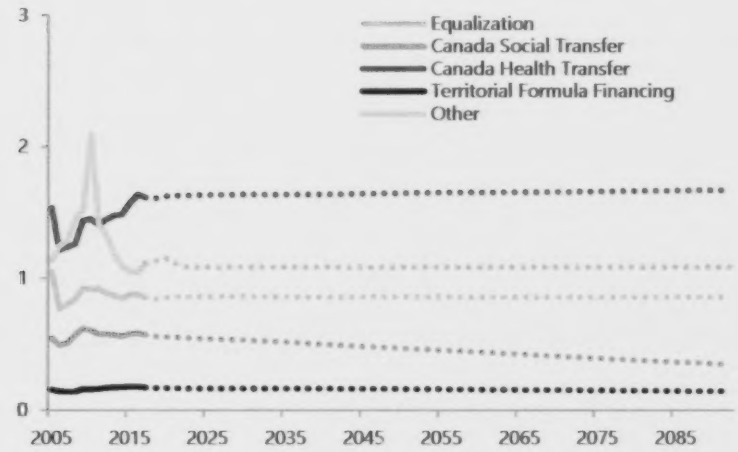
spending on elderly benefits is ultimately projected to decline as these cohorts age and pass on.

Children's benefits reached a peak of 1.1 per cent of GDP in 2017. However, given that the under-18 age group will comprise a smaller share of the total population over the coming decades and that benefit payments are indexed only to inflation, children's benefits will decline relative to the size of the economy. By the end of our projection, children's benefits are projected to decline to 0.5 per cent of GDP.

Federal major transfers to other levels of government are also projected to decline slightly between 2020 and 2092, from 4.3 per cent of GDP to 4.1 per cent of GDP (Figure 4-2). The Canada Health Transfer (CHT) and Equalization are legislatively linked to growth in the national economy. However, the Canada Social Transfer (CST) is not—it is legislated to increase by 3 per cent per year, which is 0.7 percentage points lower, on average, than our projected growth in nominal GDP. We project that CST payments will decline from 0.6 per cent of GDP in 2017 to 0.3 per cent of GDP by 2092.

Figure 4-2 Major transfers to provinces: federal government

% of GDP

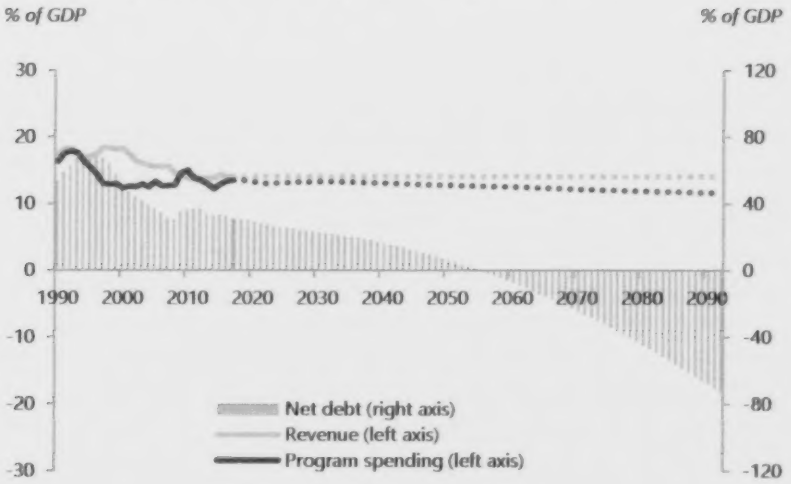


Sources: Statistics Canada and Parliamentary Budget Officer.

Note: The projection period covers 2018 to 2092.

We project that revenues will exceed program spending over the projection period, resulting in continuously increasing primary surpluses (Figure 4-3). Based on our projection, federal government net debt, currently 31.1 per cent of GDP, would be eliminated by 2055.

Figure 4-3 Fiscal projection summary: federal government



Sources: Statistics Canada and Parliamentary Budget Officer.

Note: The projection period covers 2018 to 2092.

Fiscal sustainability assessment

Current fiscal policy at the federal level is sustainable over the long term. To maintain net debt at its current (2017) level of 31.1 per cent of GDP over the long term, PBO estimates that the federal government could permanently increase spending or reduce taxes by 1.4 per cent of GDP ($29 billion in current dollars) while maintaining fiscal sustainability.

Our qualitative assessment that current federal fiscal policy is sustainable over the long term is unchanged across the alternative demographic, economic and fiscal policy assumptions considered (see Table A-1 in Appendix A).

Our estimate of federal fiscal room has been revised up from 1.2 per cent of GDP in last year's assessment. The upward revision largely reflects higher revenues in 2017 that we project will largely persist over the medium term.

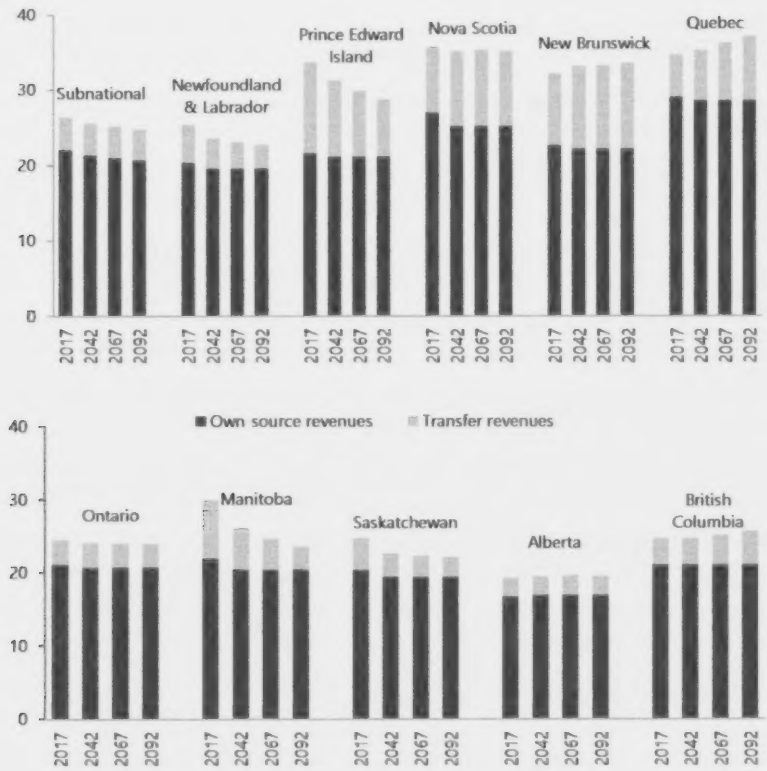
5. Subnational governments

Subnational governments will also face downward pressure on their revenues as growth in their tax base slows. In contrast to the federal government, subnational governments will face ever-increasing health care costs due to population ageing that will not be dampened or offset by lower inflation-adjusted spending per beneficiary as is the case for Old Age Security. Medium-term primary deficits at the subnational level, as well as reduced federal transfers (relative to the size of their economies), also contribute to the deterioration in subnational government finances over the long term.

Provinces derive most of their revenues from own sources, which are assumed to grow in line with provincial nominal GDP over the long term. Consequently, total revenues tend to rise or fall as a share of provincial GDP in our projection because of federal transfers (Figure 5-1). The Territories, however, derive most of their revenues from federal transfers, which given their structure, results in increased transfers (relative to territorial GDP) over the long term.[12]

Figure 5-1 Subnational government revenues: provinces

% of GDP



Sources: Statistics Canada and Parliamentary Budget Officer.

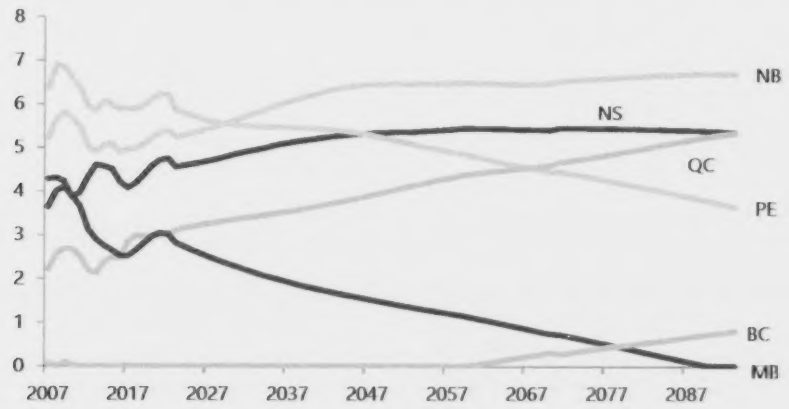
Equalization payments help explain part of these long-term trends in transfer revenue, because Equalization is determined according to each province's fiscal capacity relative to the Canadian average. Widening fiscal disparities across provinces necessitate larger transfers to provinces with lower-than-average per capita incomes, such as Quebec, New Brunswick and British Columbia. Consequently, these provinces will see increases in Equalization payments relative to their GDP over the long term (Figure 5-2). In contrast, provinces with relatively higher per capita income growth will see decreases in Equalization payments relative to their GDP.

Notably, disparities in fiscal capacities are not eliminated under the current Equalization structure. Under current law, the Equalization envelope grows in line with nominal GDP at the national level, which reduces payments below levels required to bring all provinces to the national standard, as disparities in fiscal capacity increase over our projection. Over our 75-year projection,

Equalization payments would be nearly 40 per cent higher if the nominal GDP growth cap were not in force.[13]

Figure 5-2 Equalization payments: receiving provinces

% of GDP



Sources: Statistics Canada and Parliamentary Budget Officer.

Note: The projection period covers 2018 to 2092.

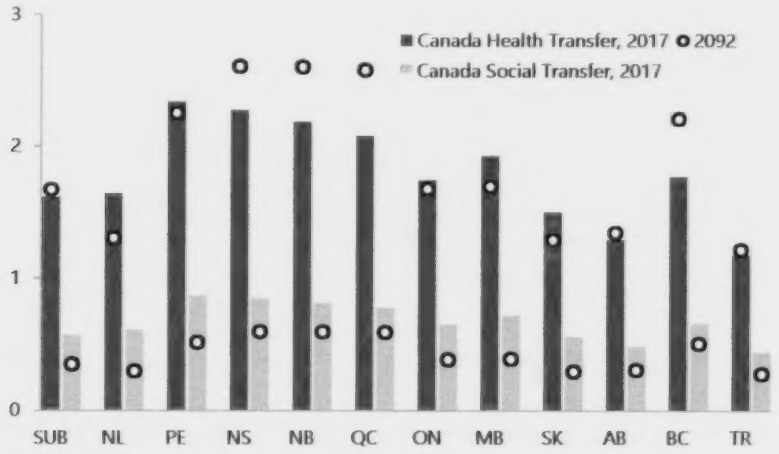
Like Equalization, CHT and CST transfers do not increase uniformly across the provinces when measured relative to their nominal GDP.

Relative to the size of their economies, CHT payments will steadily increase in provinces with growth in nominal GDP per capita that is below the national average (namely, Quebec, New Brunswick and Nova Scotia). Conversely, CHT payments will decrease relative to GDP in several other provinces (and the Territories combined) that are projected to have growth in nominal GDP per capita above the national average (Figure 5-3).

Capped at 3 per cent annual growth, CST payments will not keep pace with our projection of nominal GDP growth at the national level, so all provinces and territories will receive lower CST payments relative to the GDP over the long term.

Figure 5-3 Canada Health Transfer and Canada Social Transfer

% of GDP



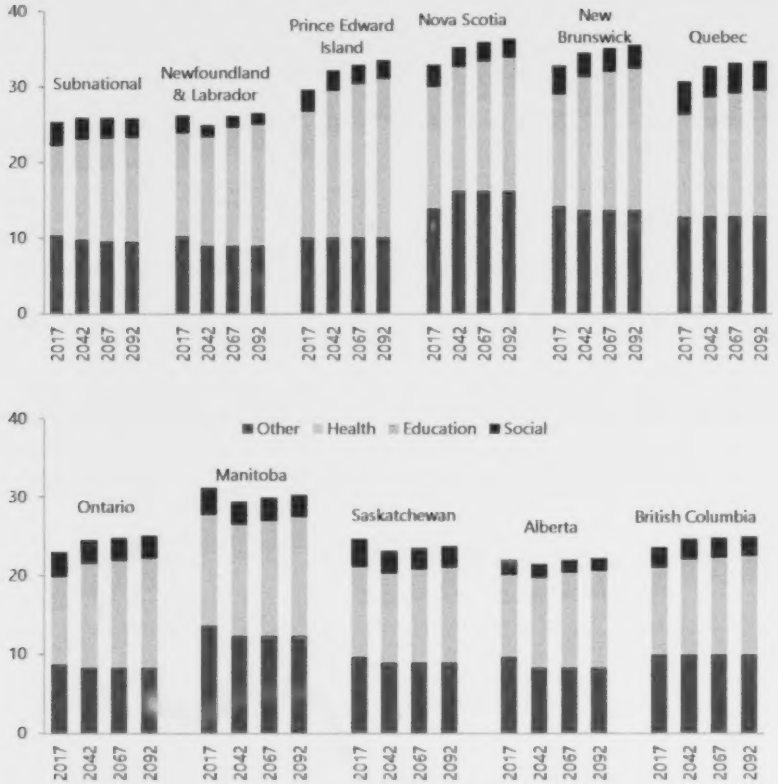
Sources: Statistics Canada and Parliamentary Budget Officer.

Note: SUB refers to the consolidated subnational government sector.

All provinces and territories will face rising health care costs due to population ageing. However, based on our projections, these cost pressures will not be spread uniformly across the country. Over the long term, differences in projected increases in program spending across provinces and territories primarily reflect differential impacts of population ageing on health care spending (Figure 5-4).[14]

Figure 5-4 Subnational government program spending: provinces

% of GDP



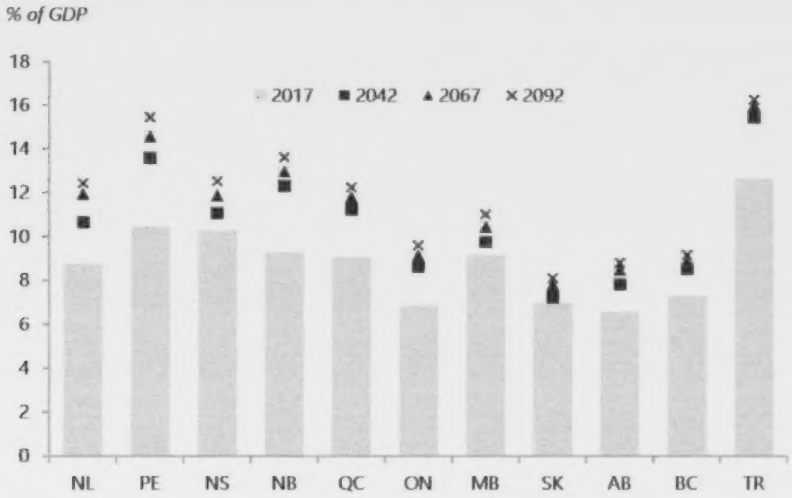
Sources: Statistics Canada and Parliamentary Budget Officer.

Subnational spending on health care varies significantly across provinces and territories. In 2017, health care spending ranged from a low of 6.6 per cent of GDP in Alberta, to a high of 12.6 per cent of GDP in the Territories (Figure 5-5).

Over the long term, we project that Prince Edward Island will experience the largest (percentage-point) increase in health care spending, approximately 5.0 percentage points of GDP. This reflects Prince Edward Island's relatively higher spending on older age groups combined with above-average increases in the share of the elderly in their population.

In addition, given that the federal CHT envelope is limited to growth in nominal GDP, we project that the federal CHT contributions to provincial and territorial health care spending will decline significantly over time from 21.4 per cent in 2017 to 17.1 per cent by 2092 at the national level.

Figure 5-5 Health spending: subnational governments



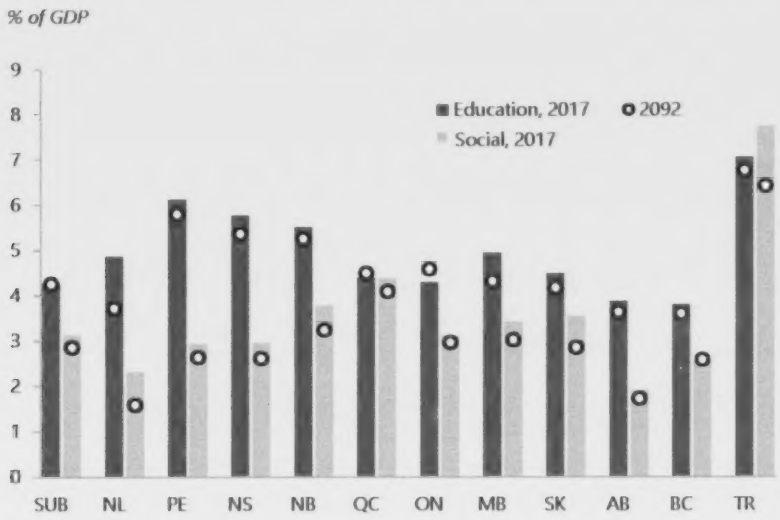
Sources: Statistics Canada; Canadian Institute for Health Information; and Parliamentary Budget Officer.

Education and social spending by subnational governments are targeted to younger age groups in the population—children ages 5 to 24 for education and the working-age population aged 15 to 65 for social spending.

Over the long term, as the share of these age groups in the population declines, subnational spending on these programs is projected to grow more slowly than their economies (Figure 5-6). That said, long-term savings from education and social spending are insufficient to offset increases in their health care costs.

Given that the federal CST envelope is limited to annual growth of 3 per cent, we project that the federal CST contributions to provincial and territorial education and social spending will decline over time from 7.7 per cent in 2017 to 5.3 per cent by 2092 at the national level.

Figure 5-6 Education and social spending: subnational governments



Sources: Statistics Canada and Parliamentary Budget Officer.

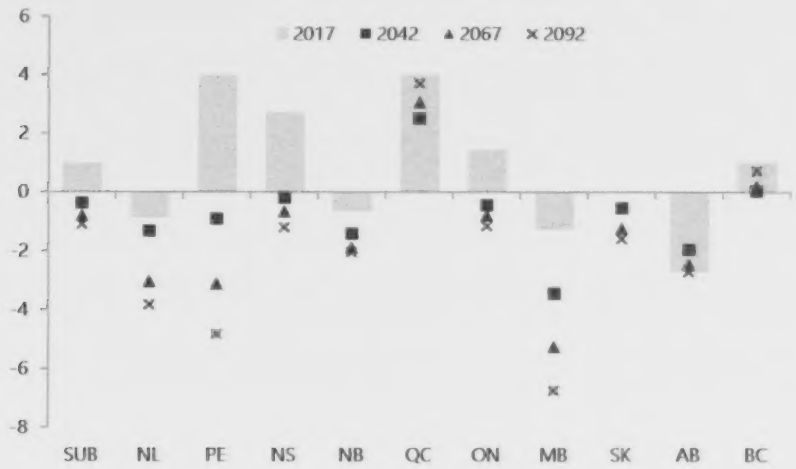
Note: SUB refers to the consolidated subnational government sector.

Primary balances in most provinces and the territories are projected to deteriorate over the long term as population ageing puts downward pressure on revenue growth and upward pressure on health care spending. For some provinces (Prince Edward Island and Manitoba), this dynamic is exacerbated by a reduction in federal transfers relative to the size of their economies. Under current policy, we project that these provinces will see the largest deterioration in their primary balance (Figure 5-7).[15]

Over the long term, primary deficits, combined with rising public debt charges, lead to excessive debt accumulation in most provinces and the Territories. Except for Quebec and British Columbia, net debt in all provinces and territories is projected to exceed 100 per cent of GDP by 2092 (Table 5-1).

Figure 5-7 Primary balances: subnational governments

% of GDP



Sources: Statistics Canada and Parliamentary Budget Officer.

Note: SUB refers to the consolidated subnational government sector.

Table 5-1 Net debt: subnational governments

% of GDP

	2017	2042	2067	2092
Subnational	25.7	35.9	66.7	108.6
Newfoundland and Labrador	31.6	76.0	228.7	518.3
Prince Edward Island	30.3	8.4	74.8	209.6
Nova Scotia	27.0	39.0	91.0	185.5
New Brunswick	33.6	115.1	261.5	496.2
Quebec	42.9	4.3	-62.3	-183.8
Ontario	33.7	43.0	76.9	127.5
Manitoba	37.2	104.9	246.2	449.8
Saskatchewan	10.6	19.4	55.2	110.9
Alberta	1.6	43.6	100.5	163.8
British Columbia	5.7	8.9	17.9	14.8
Territories	-0.8	300.4	763.2	1380.2

Sources: Statistics Canada and Parliamentary Budget Officer.

Fiscal sustainability assessment

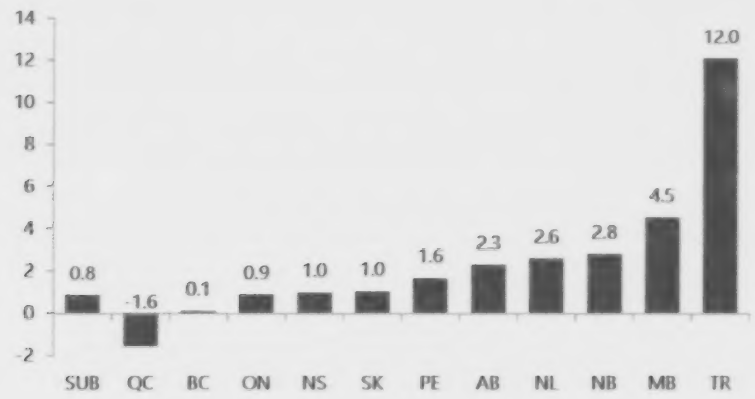
For the subnational government sector as a whole, current fiscal policy is not sustainable over the long term. We estimate that permanent tax increases or spending reductions amounting to 0.8 per cent of GDP ($18 billion in current dollars) would be required to stabilize the consolidated subnational government net debt-to-GDP ratio at its current level of 25.7 per cent of GDP over the long term.

Except for Quebec, current fiscal policies across provinces and territories are not sustainable over the long term (Figure 5-8). Based on our estimates, the amount of policy actions required to achieve fiscal sustainability varies considerably, from just 0.1 per cent of provincial GDP in British Columbia up to 12.0 per cent of territorial GDP for the Territories.

In Quebec, we estimate that the subnational government sector has fiscal room amounting to 1.6 per cent of provincial GDP to increase spending or reduce taxes while maintaining fiscal sustainability.

Figure 5-8 Subnational government fiscal gap estimates

% of GDP



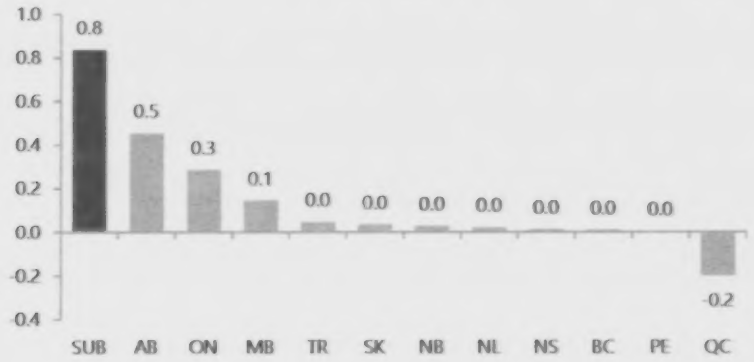
Source: Parliamentary Budget Officer.

Note: SUB refers to the consolidated subnational government sector.

Alberta makes the largest contribution to our estimate of the consolidated subnational fiscal gap: 0.5 percentage points of GDP (Figure 5-9). Alberta's contribution reflects its above-average fiscal gap and its relatively large share in the Canadian economy.

Figure 5-9 Contributions to the consolidated subnational fiscal gap

Percentage points of GDP



Source: Parliamentary Budget Officer.

Note: SUB refers to the consolidated subnational government sector.

Our qualitative assessment that current subnational fiscal policies are not sustainable over the long term is essentially unchanged across the alternative demographic, economic and fiscal policy assumptions considered (see Table A-1 in Appendix A). Our sustainability assessment is only reversed under alternative scenarios for one province, British Columbia, which is close to being sustainable under current policies (0.1 per cent of GDP).

Our estimate of the consolidated subnational fiscal gap has been revised down to 0.8 per cent of GDP from 0.9 per cent of GDP in last year's assessment. Notable changes in our projections result from lower-than-anticipated program spending in Alberta in 2017, as well as medium-term consolidation in Manitoba and Newfoundland and Labrador. These provinces have announced medium-term plans for lower program spending.[16] Our smaller subnational fiscal gap estimate demonstrates that policy decisions have significant cumulative impacts over the long term and underlines the benefits of early policy actions.

6. Public pension plans

The Canada Pension Plan (CPP) and Quebec Pension Plan (QPP) are defined benefit public plans that provide inflation-indexed benefits for retirement, disability and survivor benefits to working Canadians. Contributions are shared equally between employees and employers.

Excess cash flows in these plans have been, and will continue to be, invested in financial markets to accumulate assets that will generate investment income to fund future cash shortfalls as the number of beneficiaries relative to contributors rises with the ageing of the population.

In our 2017 FSR, we incorporated the 2016 additions to the Canada Pension Plan, which increased the replacement rate for retirement benefits and increased the annual maximum for pensionable earnings, as well as the new contribution rates that were legislated to fund these additions.

In February 2018, Quebec's National Assembly passed similar enhancements to the QPP that were also funded by new contribution rates.[17] We have incorporated these changes to the QPP into this year's report along with the June 2018 enhancements to CPP survivor, disability and death benefits.

Net cash flows and financial positions

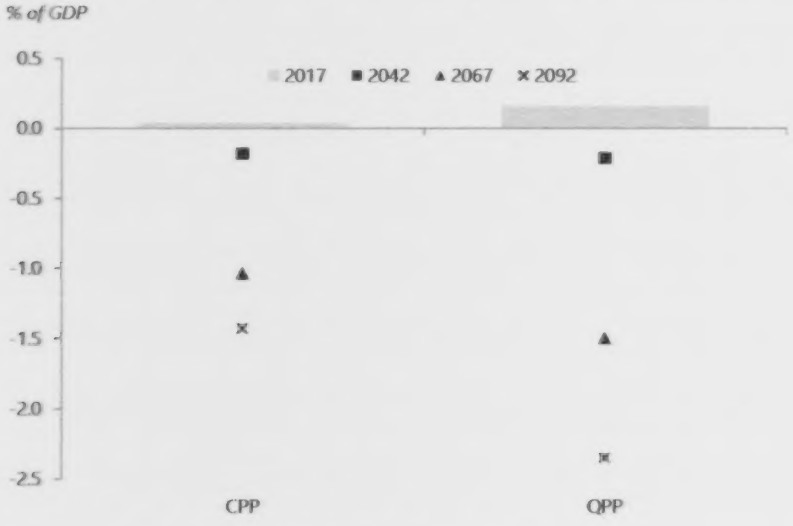
Contributions to the CPP and QPP are projected to grow in line with earnings and contribution rates. The base CPP and QPP contribution rates are fixed at 9.9 per cent and 10.8 per cent, respectively, of contributory earnings. The additional contribution rates for the plans are phased in over 2019 to 2023.[18] Contributions to the CPP are projected to rise from 2.3 per cent of GDP in 2017 to 3.2 per cent of GDP (in Canada) by the end of our projection horizon. For the QPP, contributions are projected to increase from 3.6 per cent of GDP in 2017 to 4.9 per cent of Quebec's GDP in 2092.

CPP and QPP expenditures are projected to grow in line with the retirement-age population, inflation and a portion of real wage growth, and will increase steadily as population ageing drives retirement benefits. CPP benefit payments are projected to double from 2.1 per cent of GDP in 2017 to 4.2 per cent by the end of the projection period. Over the same period, QPP benefits are projected to rise from 3.4 per cent of GDP to 6.5 per cent.

We have assumed that CPP and QPP administrative expenses, including investment expenses, are set equal 1.0 per cent of their respective financial assets over the projection horizon. For the base (additional) CPP and QPP, the ultimate nominal rate of return on assets, before investment expenses, is assumed to be 6.7 (6.3) per cent.

The additional CPP and QPP benefits and contributions are combined with their base plans to project their respective financial positions over the long term. The net cash flow (that is, contributions less expenses) of the CPP is projected to rise from 0.04 per cent of GDP in 2017 to 0.30 per cent of GDP in 2025, as the additional contributions exceed the additional expenditures, and decline thereafter to a deficit of 1.43 per cent of GDP by the end of the projection horizon (Figure 6-1). The net cash flow of the QPP is projected to increase from 0.16 per cent of GDP in 2017 to 0.41 per cent of GDP in 2025 and then decrease to a deficit of 2.35 per cent of GDP in 2092.

Figure 6-1 Net cash flow (contributions less expenses): CPP and QPP



Sources: Statistics Canada and Parliamentary Budget Officer.

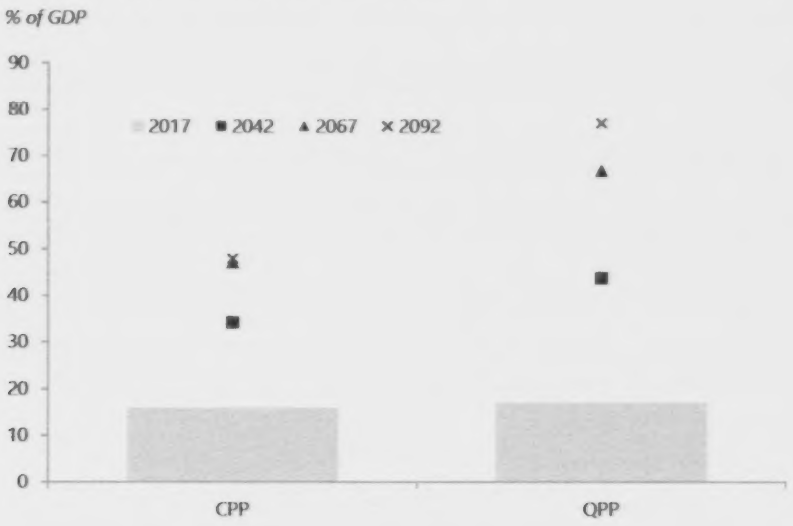
Note: The CPP (QPP) net cash flow is expressed relative to GDP in Canada (Quebec).

Although CPP and QPP contributions are projected to fall short of their plans' expenses over the long term, the net asset positions of the CPP and QPP are projected to increase and remain above their current levels. Asset accumulation occurs because the rate of return on plan assets is more than sufficient to generate enough investment income to cover the annual cash flow deficits. The net asset position of the CPP is projected to increase from 15.9 per cent of GDP in 2017 to 47.8 per cent of GDP by the end of the projection horizon (Figure 6-2). The QPP net asset position is projected to rise from 16.9 per cent of GDP in 2017 to 76.9 per cent of GDP in 2092.

Despite the QPP's larger cash flow deficit over the long term, its net asset position is projected to exceed that of the CPP, even though the asset return assumptions are the same for both plans. This is due to the QPP's higher *relative* rate of return. That is, the rate of return of its assets relative to nominal GDP. Since Quebec's GDP is projected to grow more slowly than the

Canadian GDP, its relative rate of return is higher, which results in additional asset-to-GDP accumulation for a given net cash flow.

Figure 6-2 Net asset positions: CPP and QPP



Sources: Statistics Canada and Parliamentary Budget Officer.

Note: The CPP (QPP) net asset position is expressed relative to GDP in Canada (Quebec).

Fiscal sustainability assessment

Fiscal gaps for the CPP and QPP represent the immediate and permanent change in contributions and/or benefits that returns their net asset-to-GDP ratios to their current (2017) level after 75 years.

The current structure of the CPP and QPP is sustainable over the long term. We estimate the fiscal gaps for the CPP and QPP to be, respectively, -0.1 per cent of GDP (in Canada) and -0.2 per cent of GDP (in Quebec). That is, CPP contributions could be reduced, or benefits increased, by 0.1 per cent of GDP, while maintaining fiscal sustainability. Similarly, QPP contributions could be reduced, or benefits increased, by 0.2 per cent of GDP, while maintaining fiscal sustainability.

Our qualitative assessment that the CPP and QPP are sustainable over the long term is unchanged across the alternative demographic and economic assumptions considered (see Table A-2 in Appendix A).

Our fiscal gap estimates have been revised slightly from 0.0 per cent of GDP, for each plan, in last year's report. This slight revision reflects changes to employment projections and model assumptions.

Appendix A: Sensitivity analysis

To help gauge the sensitivity of our baseline fiscal gaps, we consider alternative demographic, economic and fiscal policy scenarios. Fiscal gaps for each jurisdiction under our baseline and demographic, economic and fiscal policy scenarios are expressed as a percentage of GDP in Table A-1.

The following provides additional detail for the alternative scenarios considered.

Alternative demographic projections

PBO projects the fiscal gap under three alternative demographic scenarios: (1) an older population scenario with lower fertility, higher life expectancy and lower immigration rates; (2) a younger population scenario with higher fertility, lower life expectancy, and higher immigration rates; and (3) an interprovincial migration scenario based on more recent historical trends.

Alternative economic projections

To assess the sensitivity of the economic assumptions, we construct alternative projections for real GDP growth (± 0.5 percentage points) and interest rates (± 50 basis points), beginning in 2023. Alternative real GDP growth projections are constructed using different assumptions for labour productivity growth.

Alternative fiscal policy assumptions

In terms of alternative fiscal policy assumptions, we limit our focus to alternative health spending projections and alternative endpoint assumptions for government debt ratios.

In the baseline subnational government projections, we assume that growth in health care spending is determined by income growth (nominal GDP) and growth due to changes in the age structure of the population. Our alternative health care spending projections include excess cost growth in health care spending (that is, growth in excess of nominal GDP and growth due to population ageing) of ± 0.25 percentage points, beginning in 2023.

Our baseline fiscal gap is estimated based on an assumption that the ratio of net debt-to-GDP converges to its current level in 75 years. We consider two alternative endpoint scenarios for the federal government and subnational governments: 0 and 100 per cent of GDP.

Table A-1 Fiscal gap estimates under alternative scenarios

% of GDP

Scenario	Federal	Subnational	Newfoundland and Labrador	Nova Scotia	Prince Edward Island	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories	CPP	QPP
Baseline	**(1.4)**	**0.8**	**2.6**	**1.0**	**1.6**	**2.8**	**(1.6)**	**0.9**	**4.5**	**1.0**	**2.3**	**0.1**	**12.0**	**(0.1)**	**(0.2)**
Older population	(0.9)	1.2	3.0	1.5	2.5	3.3	(1.0)	1.2	5.1	1.2	2.6	0.4	8.7	0.0	0.0
Younger population	(1.8)	0.6	2.3	0.9	1.5	2.7	(2.1)	0.7	4.1	0.9	2.0	(0.1)	18.2	(0.2)	(0.4)
Interprovincial immigration	(1.3)	0.8	2.4	1.1	1.9	2.9	(1.6)	0.9	4.5	0.9	2.3	0.1	7.1	(0.1)	(0.2)
Higher GDP growth	(2.0)	0.8	2.6	1.0	1.9	2.8	(1.7)	0.8	4.6	1.1	2.4	0.1	18.0	(0.1)	(0.2)
Lower GDP growth	(0.6)	0.8	2.6	0.9	1.4	2.8	(1.4)	0.9	4.5	1.0	2.2	0.1	2.3	(0.2)	(0.2)
Higher interest rates	(1.1)	1.0	2.7	1.1	1.6	3.0	(1.3)	1.0	4.6	1.1	2.3	0.2	12.0	(0.2)	(0.3)
Lower interest rates	(1.6)	0.7	2.5	0.8	1.7	2.6	(1.9)	0.7	4.5	1.0	2.3	0.0	12.1	(0.1)	(0.1)
Higher health spending growth	(1.3)	1.6	3.3	1.7	2.8	3.6	(0.8)	1.6	5.4	1.6	3.1	0.8	17.1	N/A	N/A
Lower health spending growth	(1.4)	0.1	1.9	0.3	0.6	2.0	(2.3)	0.2	3.7	0.5	1.6	(0.6)	9.8	N/A	N/A
0% debt-to-GDP endpoint	(0.9)	1.1	2.8	1.1	1.9	3.0	(1.3)	1.2	4.9	1.1	2.3	0.2	12.1	N/A	N/A
100% debt-to-GDP endpoint	(2.2)	0.1	2.2	0.5	1.0	2.4	(2.0)	0.3	3.8	0.1	0.9	(0.8)	11.2	N/A	N/A

Source: Parliamentary Budget Officer.

Appendix B: Fiscal gap definition

A government's budget balance *BB* is defined as $BB_t = PB_t - i_t \cdot D_{t-1}$, where *PB* is the primary balance (revenues minus program spending) and *i* is the effective rate on government debt *D*. Government debt accumulates according to $D_t = (1+i_t)\cdot D_{t-1} - PB_t$. Solving the debt accumulation equation forward and substituting yields:

$$D_t = \prod_{i=1}^{k}\left(\frac{1}{1+i_{t+i}}\right)\cdot D_{t+k} + \sum_{i=1}^{k}\prod_{j=1}^{i}\left(\frac{1}{1+i_{t+j}}\right)\cdot PB_{t+i}$$

Fiscal sustainability is conventionally defined as satisfying the condition that debt cannot ultimately grow faster than the interest rate. Denoting growth in debt as *x* and evaluating over the infinite horizon implies that if debt does not grow faster than the interest rate over the long term, then

$$\lim_{k\to\infty}\prod_{i=1}^{k}\left(\frac{1}{1+i_{t+i}}\right)\cdot D_{t+k} = \lim_{k\to\infty}\prod_{i=1}^{k}\left(\frac{1+x_{t+i}}{1+i_{t+i}}\right)\cdot D_t = 0;$$

and the relationship holds that the current debt level must equal the present value of future primary balances, which is the starting point for fiscal gap calculations.

$$D_t = \sum_{i=1}^{\infty}\prod_{j=1}^{i}\left(\frac{1}{1+i_{t+j}}\right)\cdot PB_{t+i}$$

Given projected primary balances $\overline{PB}$, the current level of debt is unlikely to equal the present value of primary balances; thus the fiscal gap is the difference between the current debt level and the present value of projected primary balances. The fiscal gap Δ is usually expressed as the immediate and permanent change to the projected primary balance, calculated as a constant proportion of projected GDP ($\overline{Y}$).

$$D_t = \sum_{i=1}^{\infty}\prod_{j=1}^{i}\left(\frac{1}{1+i_{t+j}}\right)\cdot\left(\overline{PB}_{t+i} + \Delta\cdot\overline{Y}_{t+i}\right)$$

$$\Delta = \frac{D_t - \sum_{i=1}^{\infty}\prod_{j=1}^{i}\left(\frac{1}{1+i_{t+j}}\right)\cdot\overline{PB}_{t+i}}{\sum_{i=1}^{\infty}\prod_{j=1}^{i}\left(\frac{1}{1+i_{t+j}}\right)\cdot\overline{Y}_{t+i}}$$

The fiscal gap can also be computed over finite horizons under alternative assumptions about the endpoint debt-to-GDP ratio d^* at some point k periods in the future. Typically, the current debt-to-GDP ratio is used as the endpoint.

$$D_t = \prod_{i=1}^{k}\left(\frac{1}{1+i_{t+i}}\right)\cdot d^*\cdot \bar{Y}_{t+k} + \sum_{i=1}^{k}\prod_{j=1}^{i}\left(\frac{1}{1+i_{t+j}}\right)\cdot\left(\overline{PB}_{t+i} + \Lambda\cdot\bar{Y}_{t+i}\right)$$

$$\Lambda = \frac{D_t - \prod_{i=1}^{k}\left(\frac{1}{1+i_{t+i}}\right)\cdot d^*\cdot\bar{Y}_{t+k} - \sum_{i=1}^{k}\prod_{j=1}^{i}\left(\frac{1}{1+i_{t+j}}\right)\cdot PB_{t+i}}{\sum_{i=1}^{k}\prod_{j=1}^{i}\left(\frac{1}{1+i_{t+j}}\right)\cdot\bar{Y}_{t+i}}$$

In the case where interest rates and GDP growth (g) are constant, the fiscal gap reduces to the following:

$$\Delta = \left(\frac{i-g}{1+g}\right)\cdot\left[\frac{D_t}{Y_t} - \left(\frac{1+g}{1+i}\right)^k\cdot d^* - \sum_{i=1}^{k}\left(\frac{1+g}{1+i}\right)^i\cdot\frac{\overline{PB}_{t+i}}{\bar{Y}_{t+i}}\right]$$

Notes

1. Abbreviations for province names are based on the internationally-approved alpha code for Canada Post, see https://www150.statcan.gc.ca/n1/pub/92-195-x/2011001/geo/prov/tbl/tbl8-eng.htm. TR refers to the consolidated territories.
2. See http://www.statcan.gc.ca/pub/13-605-x/2014005/article/14088-eng.htm for an overview of the Canadian Government Finance Statistics.
3. Available at: https://www.imf.org/external/Pubs/FT/GFS/Manual/2014/gfsfinal.pdf.
4. The main adjustments in the Government Finance Statistics are the exclusion (inclusion) of revenue or expenses otherwise included (excluded) in the Public Accounts and alternative definitions of the universe of entities included. A searchable database of public sector entities is available on Statistics Canada's website: https://www150.statcan.gc.ca/n1/pub/13-607-x/2016001/273-eng.htm.
5. http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5174.
6. This report includes public accounts and budget data up to and including 31 August, 2018.
7. The Government Finance Statistics are estimated for 2017 and are subject to material revisions. Public Accounts data are rarely revised.
8. Our demographic assumptions for each jurisdiction are detailed in their respective chapters of our 2017 FSR. We have updated our projections from the FSR 2017 to reflect 2017 historical population levels. See: http://www.pbo-dpb.gc.ca/web/default/files/Documents/Reports/2017/FSR%20Oct%202017/FSR_2017_FINAL_EN.pdf.
9. PBO's methodology for projecting trends in labour input and labour productivity is described in our 2018 report available at: http://www.pbo-dpb.gc.ca/web/default/files/Documents/Reports/2018/Potential%20GDP/Measuring_Potential_GDP_EN.pdf.
10. See: http://www.pbo-dpb.gc.ca/web/default/files/Documents/Reports/2017/FSR%20Oct%202017/FSR_2017_FINAL_EN.pdf
11. The endpoint year 2005 was chosen to capture the period prior to the onset of the retirement of the baby-boom generation. Over the projection period 2018 to 2092, growth in labour productivity is the same under both projections in Figure 3-4.
12. Three quarters of territorial revenues are generated through transfers from the federal government. As such, the Territories' projection is sensitive to growth in Territorial Formula Financing, the Canada Health Transfer and the Canada Social Transfer. The Territories' overall transfer revenue is projected

to decrease from 42.7 per cent of GDP in 2017 to 38.6 per cent of GDP in 2092.

13. For a further discussion on the impacts of the nominal GDP ceiling/floor for Equalization, see: http://www.pbo-dpb.gc.ca/web/default/files/Documents/Reports/2018/Fed%20Transfers/Fed_Transfers_Prov_Territories_EN.pdf.

14. Relative to the size of their economy, territorial program spending is projected to decrease from 65.0 per cent in 2017 to: 63.3 per cent in 2042; 63.9 per cent in 2067; and 64.1 per cent in 2092.

15. The Territories' primary balance is projected to decrease from 10.5 per cent of GDP in 2017 to 13.6 per cent of GDP in 2092.

16. Statistics Canada revised the Government Finance Statistics for 2016 and prior, contributing to a smaller subnational fiscal gap in our projections.

17. For additional detail see the November 2017 QPP actuarial report (available in French only): https://www.rrq.gouv.qc.ca/SiteCollectionDocuments/www.rrq.gouv.qc/Francais/publications/regime_rentes/1005f-rapport-actuariel-rrq.pdf.

18. For both the CPP and QPP, the first additional contribution rate is equal to 2.0 per cent for 2023 (and thereafter) and applies to earnings between the Year's Basic Exemption and the Year's Maximum Pensionable Earnings. The second additional contribution is equal to 8.0 per cent for 2024 (and thereafter) and applies to earnings between the Year's Maximum Pensionable Earnings and the Year's Additional Maximum Pensionable Earnings.